

Patent claims

1. A circuit arrangement with a low temperature
5 circuit (2) for the cooling of charging air in a motor
vehicle comprising a turbocharger and an engine cooling
circuit (3) for cooling an engine (4), **characterized in
that** the low temperature circuit (2) can be temporarily
coupled to the engine cooling circuit (3) in such a way
10 that coolant can pass from one circuit (2, 3) into the
other circuit (2, 3) and back.

2. The circuit arrangement as claimed in claim 1,
characterized in that a feedline (8) between the engine
15 cooling circuit (3) and the low temperature circuit (2)
is provided.

3. The circuit arrangement as claimed in claim 2,
characterized in that the feedline (8) leads from an
20 engine thermostat (5), arranged in the engine cooling
circuit (3) downstream of the engine (4), as seen in
the flow direction, to a mixed thermostat (11)
integrated into the low temperature circuit (2).

4. The circuit arrangement as claimed in claim 3,
characterized in that a feedback line (14) is arranged
25 between the mixed thermostat (11) and the engine
thermostat (5).

5. The circuit arrangement as claimed in one of
30 claims 2 to 4, characterized in that the mixed
thermostat (11) is an expansion thermostat or an
electrically or pneumatically actuatable valve.

6. A method for operating a circuit arrangement (1)
35 as claimed in one of the preceding claims,
characterized in that, during the warm-up of the engine

(4), coolant flows out of the engine cooling circuit (3) into the low temperature circuit (2).

5 7. A method for operating a circuit arrangement (1) as claimed in one of the preceding claims, **characterized in that**, in the warm state of the engine (4), coolant flows out of the engine cooling circuit (3) into the low temperature circuit (2).

10 8. The method as claimed in either one of claims 6 or 7, characterized in that warm coolant from the engine cooling circuit (3) is used for the heating of charging air in the charging-air/coolant cooler (12).